



Date of filing Complete Specification May 30, 1960.

Application Date May 30, 1959.

No. 18501/59.

Complete Specification Published June 14, 1962.

Index at acceptance:—Class 26, D1.

International Classification:—A47k.

## COMPLETE SPECIFICATION

## Improvements in or relating to Bed-conveniences

We, VERNON & COMPANY LIMITED, a British Company, of Penwortham Mills, Preston, Lancashire, and FREDERICK CATERALL, a British Subject, of 193, Liverpool 5 Road, Penwortham, Preston, Lancashire, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The attention of hospital authorities is becoming increasingly focussed upon the importance of minimizing the risk of cross-infection between patients, or between patients and nursing staff, which undoubtedly exists at the present time, and one source of which may well be the indiscriminate distribution to patients of bed-pans and urine bottles drawn from a common pool, and the handling of such bed conveniences by the staff both before and after use.

The articles aforesaid are obviously liable to become infected both from the waste products they receive and from physical contact with their users, and it appears doubtful whether the equipment available for cleansing them can be regarded as fully effective or capable of leaving them in anything approaching sterile condition.

This cleansing difficulty is particularly marked in the case of bed-pans, which are customarily made with an overhanging and/or inturned lip intended to support the user in reasonable comfort, and in many hospitals the staff are faced with the highly disagreeable task of periodically washing-out such receptacles by hand to supplement their routine mechanical cleansing after use.

According to the present invention, whose object is substantially to eliminate the risk to health and general unpleasantness involved in the known procedure, a bed-pan or urine-bottle intended for disposal after a single use is constructed of a stiff fibrous material capable of rapid reduction to a state in which it can be consigned to a normal domestic drainage system without risk of choking the latter.

The disposable bed conveniences aforesaid may be moulded in one or more pieces from papier-mache or like pulp material which is, or can be rendered, moisture-resistant, and it may be designed for use in conjunction with a non-expendable carrier.

A urine bottle may alternatively be produced as a waterproofed paper bag having a restricted mouth and capable of being collapsed into flat condition for storage, the bottom of such bag being so constructed as to permit of its being stood upright before and after use.

In the accompanying drawings:—

Figs. 1 and 2 are side and end elevations, respectively, of a bed-pan according to the present invention;

Fig. 3 is an enlarged plan view of the same partly broken-away to show its carrier means;

Figs. 4 and 5 are sections on the lines 4—4 and 5—5, respectively, of Fig. 3;

Figs. 6 and 7 are side and plan views, respectively, of one form of urine bottle according to the present invention;

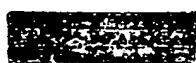
Figs. 8 and 9 are corresponding views of a modified construction of urine bottle;

Figs. 10 and 11 are perspective views of the urine bottle shown in Figs. 8 and 9; and

Fig. 12 is a side view of the same in collapsed condition.

The bed-pan illustrated in Figs. 1 to 5 is designed with overall dimensions according to those of the conventional article usually produced in stainless steel, and is likewise substantially orthodox in plan view, its upper surface having ovoidal inner and outer peripheries defining a longitudinally-inclined and somewhat-dished annular seat

[Price]



portion which is wider at one end than at the other.

The body portion 20 of the pan takes the form of an ovoidal dish with a flat bottom, an outwardly-flared circumferential wall 21, somewhat higher at one end of the pan's major axis than at the other, and a continuous outwardly-directed lip 22 whose width and upward concavity increase progressively from the higher to the lower end of the pan; the edge of such lip being curved downwardly as at 23.

The lip 22 is moulded with an internal rebate 24 adapted snugly to accommodate an annular insert 25 whose width increases progressively from the higher to the lower end thereof and whose upper surface lies substantially flush with that of the lip besides conforming to the dished shape of the latter so as to simulate collectively therewith the integral seat portion of the conventional steel pan.

Both components of the pan are moulded in papier-mâche or a like pulp material which is capable of rapid reduction, by mechanical or other means, to a state in which the pan can be consigned to a normal domestic drainage system without risk of choking the latter. A suitable thickness for both components is 1/8 inch.

It will be appreciated that the respective shapes of the body portion 20 and insert 25 enable a plurality of each component to be nested together for convenience in packing and storage.

The body portion 20 of the two-part bedpan above-described is intended to be located for use within a complementary non-expendable carrier 26 which is moulded to a dish shape (with a thickness of 3/16 to 1/4 inch) in a sufficiently-rigid thermosetting or thermoplastic synthetic resin, the outwardly-directed lip 27 of such carrier being rebated at 28 if necessary to conform to the underside of the pan lip 22.

This lip 27 is reinforced at intervals by mutually-divergent vertical webs 29 integrally-uniting the same to the circumferential wall 30 of the carrier 26 and to its downward edge 31, which latter may have gaps 32 at opposite ends of the carrier to facilitate its snug accommodation within the corresponding edge 23 of the pan.

The average hospital will need to stock only a relatively-small number of such carriers, each of which may be re-fitted with a moulded-pulp bed-pan as above-described immediately after the used pan previously-associated therewith has been disposed of.

It should be emphasized that the carrier aforesaid is not an essential part of the assembly, the mouldings 20, 25 which collectively form the bed-pan being capable of supporting a recumbent or seated user without its assistance, but is used as a matter of convenience since it facilitates sliding the two-part bed-pan into or out of position.

As an alternative to the two-part construction above-described, and in cases where storage space is not at a premium, a complete bed-pan of conventional (i.e. corresponding) shape may be integrally-moulded in the fibrous pulp material aforesaid, the pulp in slurry form being blown by compressed air onto the interior of a sectional mould which is then opened and the moulded article dried.

Figs. 6 and 7 illustrate the same mode of construction as applied to a urine bottle, whose smaller dimensions render its storage in quantity somewhat less of a problem.

A one-piece moulded urine bottle of the conventional bottle shape illustrated preferably has its neck portion wax-coated internally to give it a smoother surface, and if desired, the whole interior of the bottle may be rendered moisture-resistant in such a way as not to affect the ease with which the article can be disintegrated after use.

An alternative form of disposable urine bottle, however, is shown in Figs. 8 to 12, and consists essentially of a rectangular-bottom bag produced from a flattened tube of stiff paper or like pulp material having bellows folds 33 along opposite sides and a longitudinal seam 34.

The bottom of such bag is conveniently constructed in known manner by forming two spaced slits in one end portion of the initial blank, which portion is then diamond-folded to leave a pair of juxtaposed flaps upstanding medially thereof, these flaps and the triangular ends of the bottom formation being then folded down and overlaid by the tab 35 defined by the two slits aforesaid.

Such a bag may be rendered waterproof by providing the initial flat tube with a loose lining of thermoplastic film, the tube and lining being cut and folded together and united by heat-sealing along their full length, after which the completed bottom of the bag is subjected to further heat-treatment to secure its various overlying parts.

The other end of the bag is then heat-sealed to unite its inner impervious surfaces at one corner, which is afterwards cut away to leave the bag with an inclined profile at 36 and a relatively-restricted mouth 37, reinforced by a card stiffener 38 secured internally thereof.

A bag so constructed can be folded flat with its rectangular bottom overlying one side wall, as shown in Fig. 12, so that it is storable in a minimum of space although readily erected for use by bringing the bottom perpendicular to the sides and opening out the neck to a rectangular or diamond shape controlled by the bellows folds 33 (see Figs. 10 and 11) and a stiffener 38.

Under these conditions a bag measuring only 10-1/2 inches by 4-3/4 inches in flat condition will produce a urine bottle having a capacity equal to that of the normal 5 stainless article and standing safely erect, after use, upon a bottom 3-1/4 inches wide.

It will be obvious that a very large number of the disposable bed conveniences above-described can be provided for the same outlay as the normal complement of conventional articles and their associated cleansing equipment, the machinery or process required for disintegration of the used conveniences prior to consignment to the drains being 10 relatively simple and inexpensive.

It is intended that after use each bed-pan or urine bottle shall be disposed of simultaneously with its contents, being preferably conveyed to the disposal site by 15 conventional equipment such as a trolley having separate compartments for used and unused conveniences. Should it be necessary to carry a used bed-pan to the disposal site by hand, the bearer may avoid any risk 20 of contamination by slipping over it a bag of unwoven fabric or similar material which can be disposed of at the same time and in the same way.

We are aware that it has already been 30 proposed to provide a bed-pan with a disposable lining of waterproof paper or like material, and that it is also known to employ such a lining in a urine bottle formed in two separable parts.

### 35 WHAT WE CLAIM IS:—

1. A bed-pan or urine-bottle intended for disposal after a single use and constructed of a stiff fibrous material capable of rapid reduction to a state in which it can be 40 consigned to a normal domestic drainage system without risk of choking the latter.

2. A bed-pan according to Claim 1 moulded from papier-mache or like pulp material, further characterised by a dish-shaped body 45 portion with an outwardly-directed peripheral lip upon which rests an annular insert of

the same or similar material to provide a seat.

3. A bed-pan according to Claim 2, further characterised in that the lip aforesaid is internally rebated to accommodate the insert substantially flush with its upper surface. 50

4. A bed-pan according to Claim 2 or Claim 3, in combination with a complementary non-expendable rigid carrier. 55

5. The combination according to Claim 4, further characterised in that the carrier is of dish shape with an outwardly-directed lip adapted for snug engagement by that of the pan and reinforced by integral webs at 60 its underside.

6. A bed-convenience according to any one of the preceding claims and rendered moisture-resistant in such a way as not to affect its ease of disposal in the manner aforesaid. 65

7. A urine-bottle according to Claim 1, and formed from a flattened tube of stiff paper or like pulp material having bellows folds along opposite sides, one end of such tube being partially closed to leave a restricted mouth and the other end being folded to provide a rectangular bottom upon which the bag will stand erect after use. 70

8. A urine-bottle according to Claim 7, further characterised in that the mouth is constrained to a rectangular or diamond shape by bellows folds in the bag in conjunction with an inserted stiffening member. 75

9. A urine-bottle according to Claim 7 or Claim 8, further characterised by a loose lining of thermoplastic film applied to the tube of paper or like pulp material prior to the latter's formation into a bag and subsequently heat-sealed thereto. 80

10. A bed-convenience substantially as described with reference to, and as shown in Figs. 1 to 5, or Figs. 6 and 7, or Figs. 8 to 12 of the accompanying drawings. 85

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## PROVISIONAL SPECIFICATION

### Improvements in or relating to Bed-conveniences

90 We, VERNON & COMPANY LIMITED, a British Company, of Penwortham Mills, Preston, Lancashire, and FREDERICK CATERALL, a British Subject, of 193, Liverpool Road, Penwortham, Preston, Lancashire, do 95 hereby declare this invention to be described in the following statement:—

The attention of hospital authorities is becoming increasingly focussed upon the importance of minimizing the risk of cross-infection between patients, or between 100 patients and nursing staff, which undoubtedly exists at the present time and one source

of which may well be the indiscriminate distribution to patients of bed-pans and bed-urinals drawn from a common pool, and the handling of such conveniences by the staff both before and after use.

The articles aforesaid are obviously liable to become infected both from the waste products they receive and from physical contact with their users, and it appears doubtful whether the equipment available for cleansing them can be regarded as fully effective or capable of leaving them in anything approaching sterile condition. 110

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This cleansing difficulty is particularly marked in the case of bed-pans, which are customarily made with an overhanging and/or inturned lip intended to support the user in reasonable comfort, and in many hospitals the staff are faced with the highly disagreeable task of periodically washing out such receptacles by hand to supplement their routine mechanical cleansing after use.

10 The present invention, whose object is substantially to eliminate the risk to health and general unpleasantness involved in the known procedure, consists in constructing a bed-convenience of an inexpensive fibrous material such that it can quickly and harmlessly be disposed of, by way of the normal drainage system, after a single use.

15 The disposable convenience aforesaid may either be moulded in one piece or assembled from two or more mouldings of the same or different materials, and if necessary it may be rendered at least temporarily moisture-resistant as regards its interior surfaces.

20 In the case of a bed-pan, it is proposed to employ two such sections produced from papier-mache or other cheap and readily mouldable material of a fibrous nature which can be pulped or shredded by suitable treatment or equipment into a form capable of safe disposal through normal drainage channels.

25 The body or receiver portion of the pan may be moulded as an open-topped flat-bottomed box, of oval, circular or other plan-form and preferably somewhat wedge-shaped in side elevation, which serves to support an annular top or seat portion, the latter being either flat or concave as regards its upper

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surface and having a dependent peripheral flange which locates either internally or externally of the body wall.

That is to say, the top, when in position, overhangs at either the inner or outer side of such wall, being designed to afford a suitable area of support and with a central aperture of appropriate size.

The body wall is preferably stiffened by moulding it with continuous or spaced vertical corrugations having an amplitude or peak/valley height of (say) 1-1/2 to 2 inches and complementary corrugations may be formed in the coacting flange of the top member.

Alternatively, the top or seat portion of the article may be represented by an integral

outwardly directed flange around the rim of the body or receiver, its junction therewith being preferably reinforced by moulded gussets at the underside.

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A bed-urinal in accordance with the present invention is likewise conveniently moulded either in one piece or in two sections which may be mirror images one of the other and united edge-to-edge in the central longitudinal plane of the article. The latter may be of conventional shape and adapted for either male or female use. Furthermore one or each section of the article may be moulded with a handle-forming portion.

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Whatever form the disposable convenience may take, the normally absorbent material used in its construction is preferably rendered temporarily moisture-resistant in such a way as not to affect the ease with which the article can be disintegrated after use. For example, the interior surface of the assembled convenience, or of each of its components, may be impregnated with a suitable wax or varnish or thinly coated with a plastic composition. In the case of a bed-urinal the impregnant or coating may be utilized, with or without the assistance of heat and/or pressure, for uniting the two halves of the article together.

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It will be obvious that a very large number of the disposable conveniences can be provided for the same outlay as the normal complement of stainless-steel or porcelain articles and their associated cleansing equipment, the machinery or process required for disposal of the convenience after use being relatively simple and inexpensive.

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It is intended that after use each bed-pan or urinal shall be disposed of simultaneously with its contents, being preferably conveyed to the disposal site by conventional equipment such as a trolley having separate compartments for used and unused conveniences. Should it be necessary to carry a used bed-pan to the disposal site by hand, the bearer may avoid any risk of contamination by slipping over it a bag of unwoven fabric or similar material which can be disposed of at the same time and in the same way.

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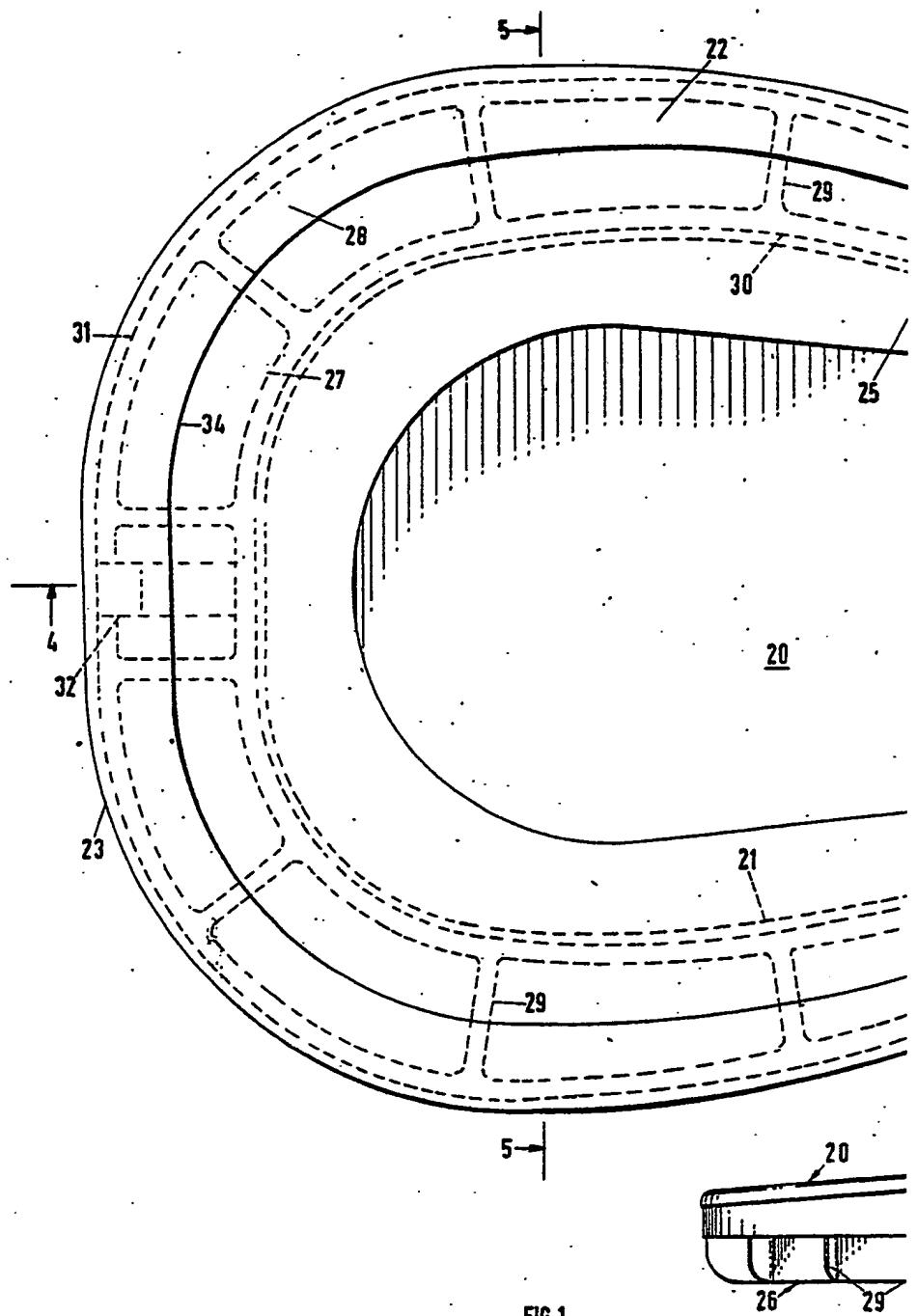


FIG.1.

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COMPLETE SPECIFICATION

3 SHEETS

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the Original on a reduced scale*

Sheet 1

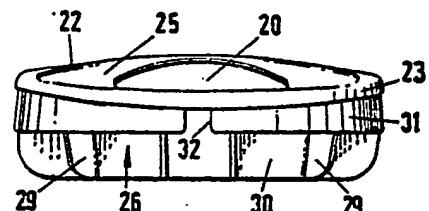
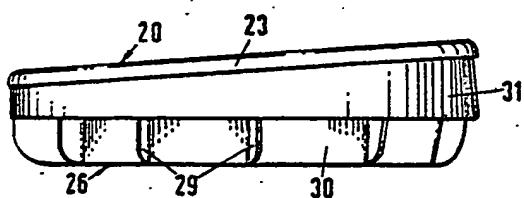
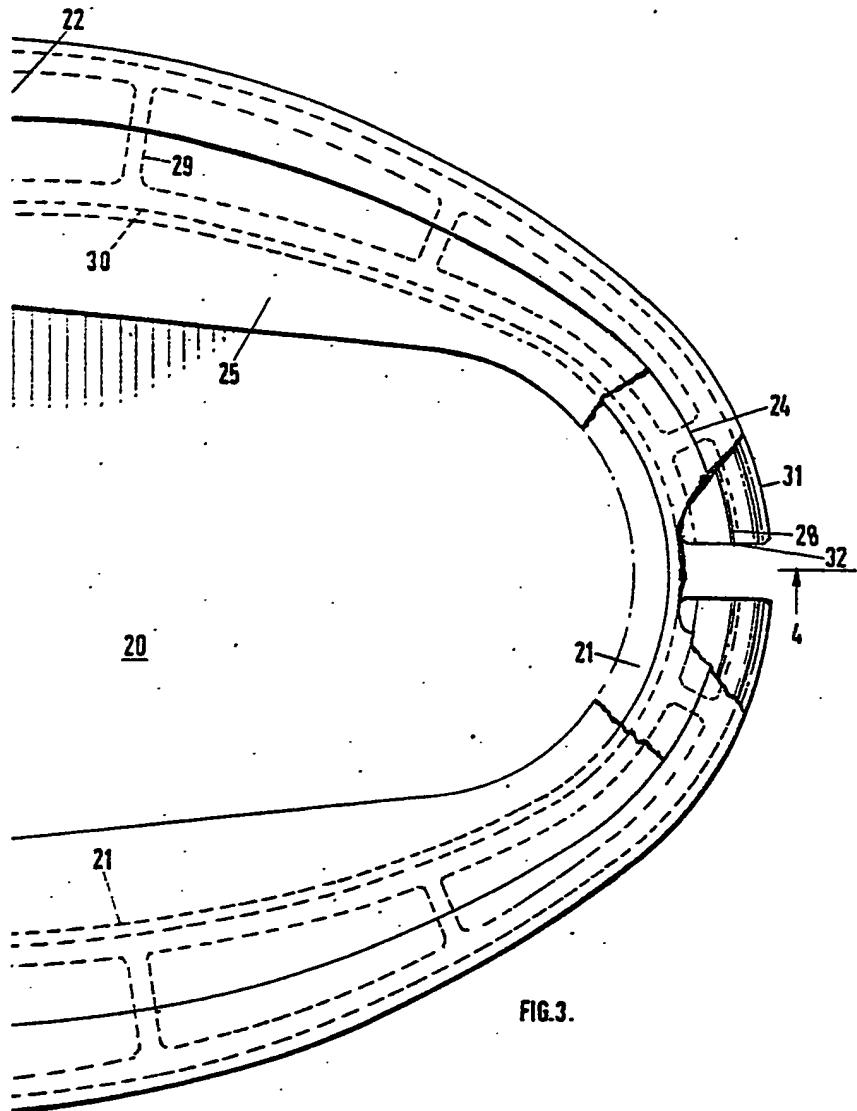


FIG. 2.

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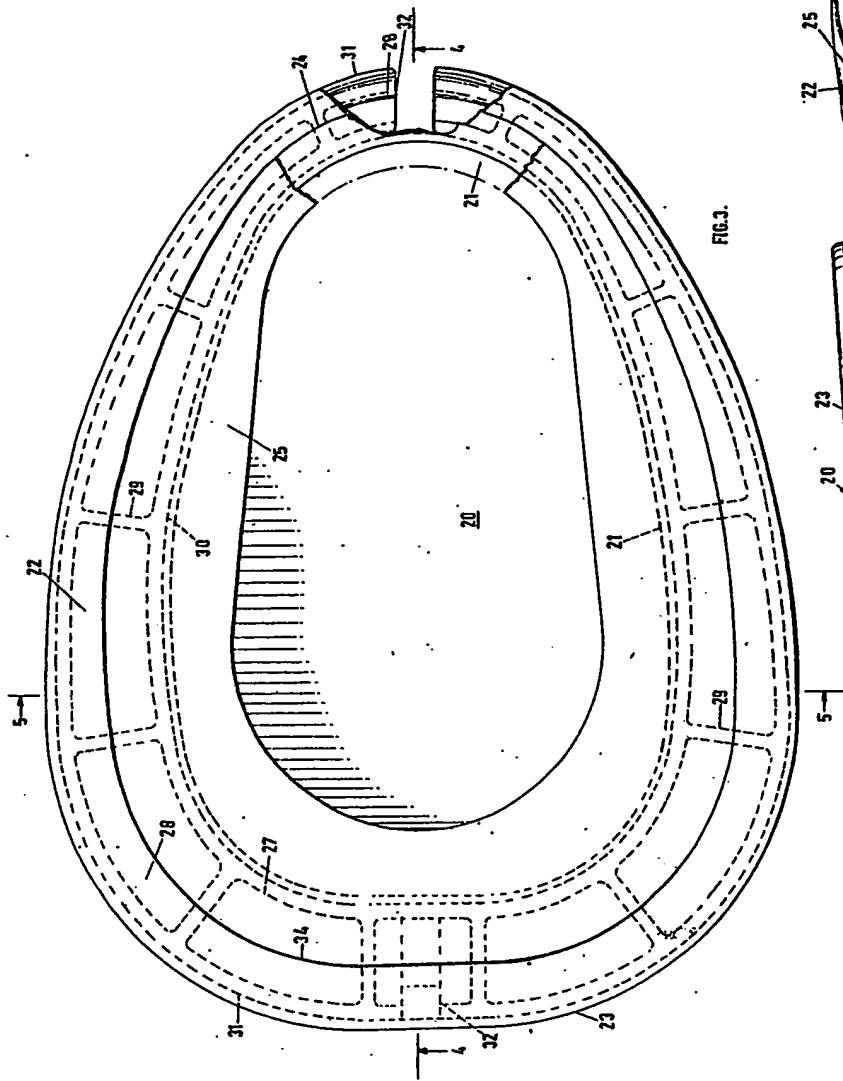


FIG. 3.

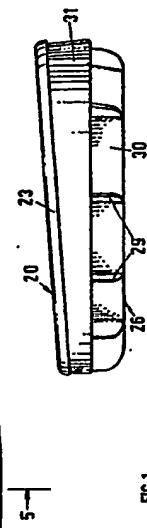
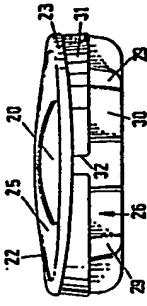


FIG. 1.



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COMPLETE SPECIFICATION

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the Original on a reduced scale*

Sheet 2

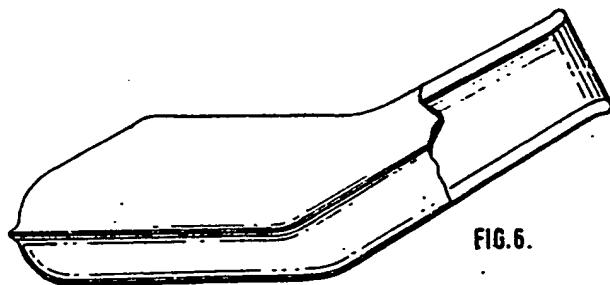


FIG. 6.

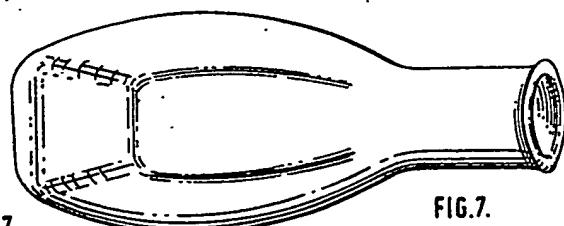


FIG. 7.

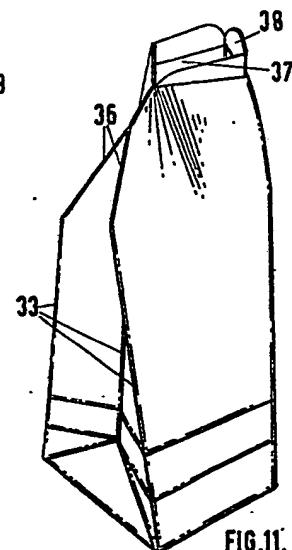
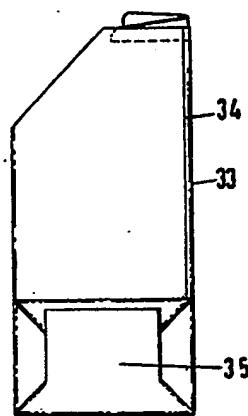
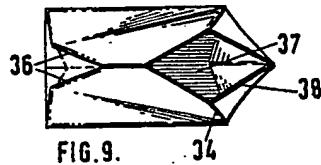
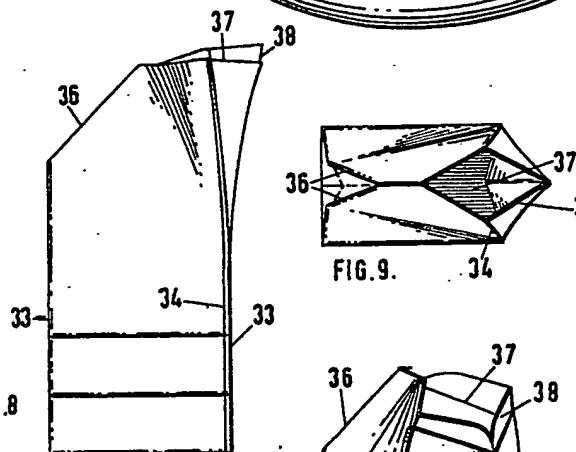


FIG. 12.

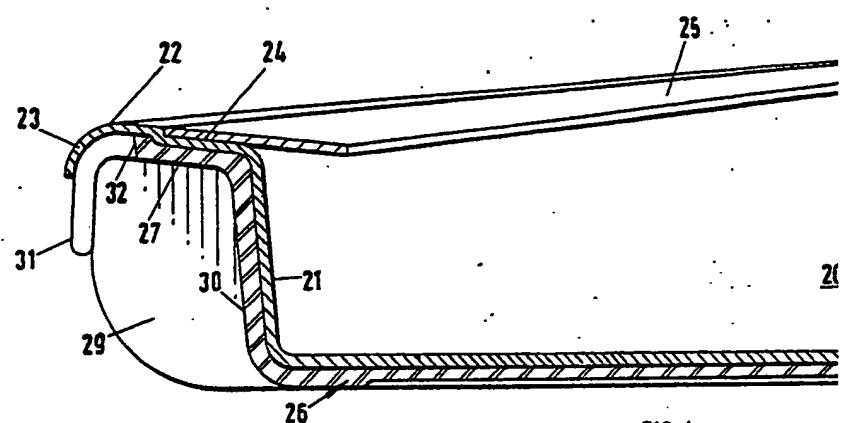


FIG. 4.

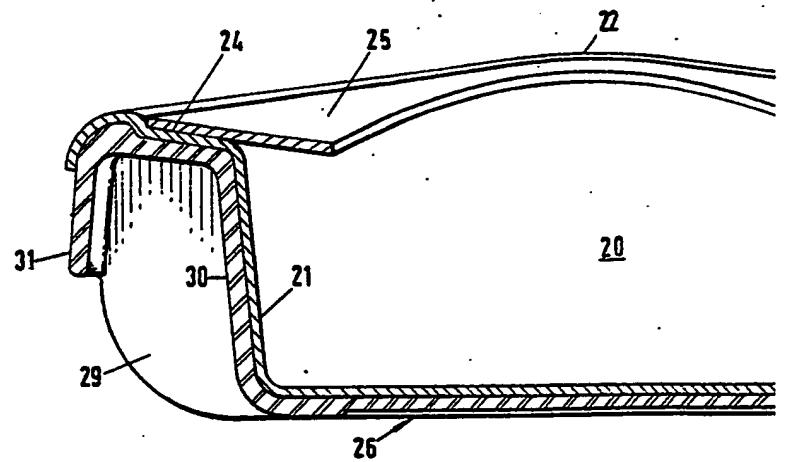


FIG. 5.

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Sheet 3

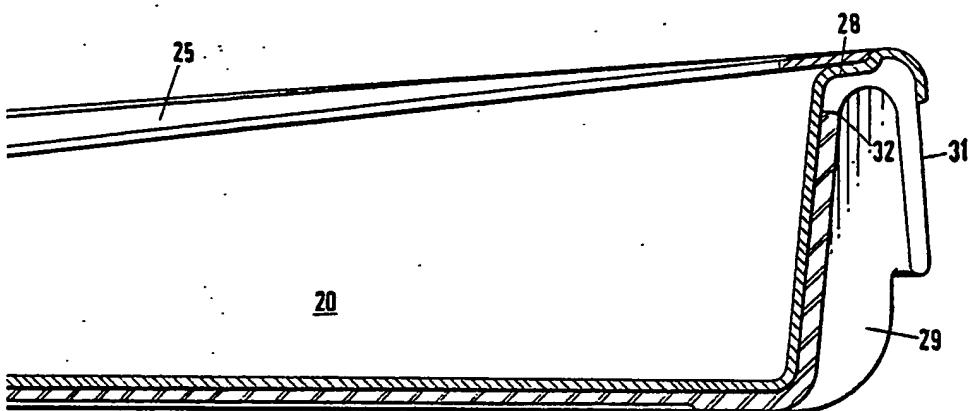


FIG. 4.

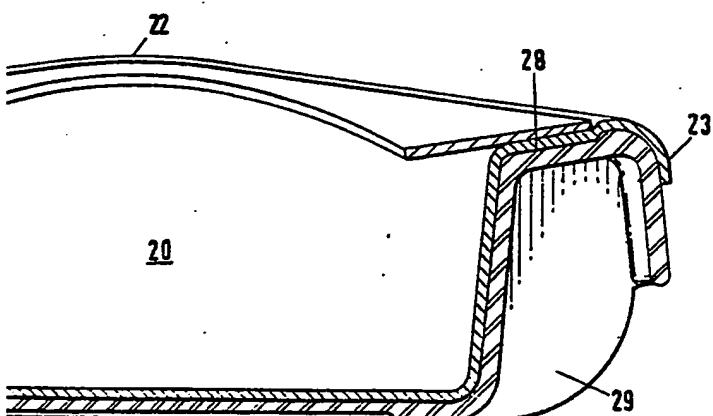


FIG. 5.

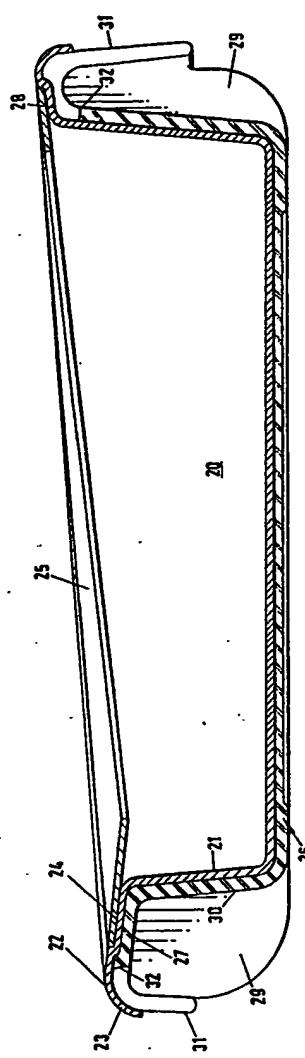


FIG. 4.

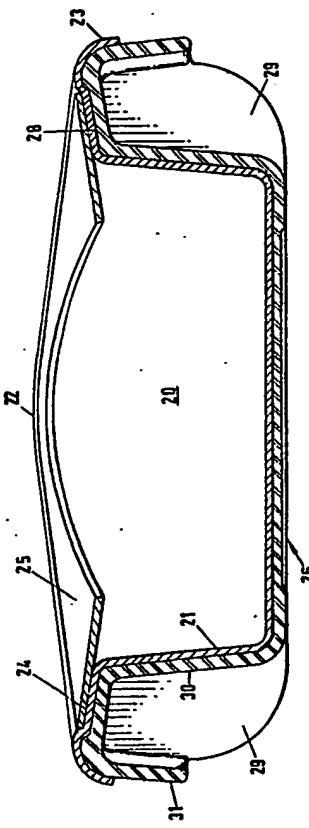


FIG. 5.